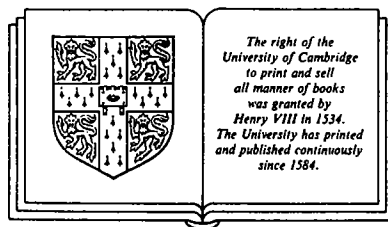


# EXHIBIT A

# Cambridge Dictionary of Science and Technology

General Editor

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Physical Constants

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scene. See **back projection**, **front projection**, **travelling  
matte shot** etc.

**composite resistor** (*Elec.Eng.*). One formed of solid rod  
of carbon compound.

**composite structure** (*Eng.*). Any structure made by  
bonding two or more different materials, such as metal,  
plastic, composite material etc.

**composite truss** (*Build.*). A roof truss formed of timber  
struts and steel or wrought-iron ties (apart from the main  
tie, which is usually of timber to simplify fixings).

**composite yarn** (*Textiles*). Yarn made from a combina-  
tion of staple fibres and continuous filaments.

**composition** (*Chem.*). The nature of the elements present  
in a substance and the proportions in which they occur.

**composition founts** (*Print.*). The smaller sizes of type, up  
to 14-point, as used for bookwork.

**composition nails** (*Build.*). Roofing nails made of a cast  
60-40 copper-zinc alloy.

**composition of atmosphere** (*Chem.*). Dry atmospheric  
air contains the following gases in the proportions (by  
weight) indicated: nitrogen, 75.5; oxygen, 23.14; argon,  
1.3; carbon dioxide, 0.05; krypton, 0.028; xenon, 0.005;  
neon, 0.000 86; helium, 0.000 056. There are variable  
trace amounts of other gases incl. hydrogen and ozone.  
Water content, which varies greatly, is excluded from this  
analysis.

**composition of forces** (*Phys.*). The process of finding the  
resultant of a number of forces, that is a single force  
which can replace the other forces and produce the same  
effect. See **parallelogram of forces**.

**composition rollers** (*Print.*). (1) For letterpress printing,  
a mixture of glue, glycerine and molasses. (2) For  
lithographic printing, vegetable oils and rubber, vulcan-  
ized.

**compositor** (*Print.*). A craftsman whose work consists of  
setting up type matter by hand, or correcting that set by  
machine. Skill and judgment in display work are part of  
his routine.

**compost** (*Bot.*). (1) Rotted plant material and/or animal  
dung etc. used as a soil conditioner. (2) A medium in  
which plants (especially plants in pots) are grown,  
composed of one or more of sand, soil, grit, peat, perlite,  
vermiculite etc. with lime and fertilizers as necessary.

**compound** (*Bot.*). Consisting of several parts: a leaf made  
up of several distinct leaflets; an inflorescence of which  
the axis is branched etc. Cf. **simple**.

**compound** (*Chem.*). See **chemical compound**.

**compound arch** (*Arch.*). An arch having an **archivolt**  
receding in steps, so as to give the appearance of a  
succession of receding arches of varying spans and rises.

**compound brush** (*Elec.Eng.*). A type of brush used for  
collecting current from the commutator of an electric  
machine; the brush has alternate layers of copper and  
carbon so that the conductivity is greater longitudinally  
(i.e. in the direction of the main current flow) than  
laterally.

**compound catenary construction** (*Elec.Eng.*). A con-  
struction used for supporting the overhead contact wire  
of an electric traction system; the contact wire is  
supported from an auxiliary catenary which, in turn, is  
supported from a main catenary, all 3 wires lying in the  
same plane.

**compound curve** (*Surv.*). A curve composed of two arcs  
of different radii, having their centres on the same side of  
the curve, connecting two straights.

**compound dredger** (*Civ.Eng.*). A type of dredger com-  
bining the suction or suction cutter apparatus with a  
bucket ladder.

**compound engine** (*Eng.*). A development of the **simple**  
steam engine, the compound engine has two or more  
cylinders of different size, allowing the steam to expand  
over several stages and enabling more work to be done  
per unit mass of steam and thus give greater efficiency at  
the cost of increased complexity.

**compound eyes** (*Zool.*). Paired eyes consisting of many  
facets or ommatidia, in most adult Arthropoda.

**compound fault** (*Geol.*). A series of closely spaced parallel  
or subparallel faults.

**compound filled apparatus** (*Elec.Eng.*). Electrical appa-  
ratus (e.g. bus-bars, potential transformers, switchgear)  
in which all live parts are enclosed in a metal casing filled  
with insulating compound.

**compound generator** (*Elec.Eng.*). See **compound motor**.

**compound girder** (*Build.*). A rolled-steel joist strength-  
ened by additional plates riveted or welded to the flanges.

**compounding** (*Eng.*). The principle, or the use of the  
principle, of expanding steam in two or more stages,  
either in reciprocating engines or steam-turbines.

**compound lever** (*Eng.*). A series of levers for obtaining a  
large mechanical advantage, the short arm of one being  
connected to the long arm of the next; used in large  
weighing and testing machines.

**compound magnet** (*Elec.Eng.*). A permanent magnet  
made up of several laminations.

**compound microscope** (*Phys.*). See **microscope**.

**compound modulation** (*Telecomm.*). Use of an already  
modulated wave as a further modulation envelope. Also  
called **double modulation**.

**compound motor, generator** (*Elec.Eng.*). One which has  
both series and shunt field windings.

**compound nucleus** (*Phys.*). In certain nuclear reactions,  
the bombarding particle forms a highly excited unstable  
**compound nucleus** with the target nucleus. This com-  
pound nucleus decays to complete the reaction.

**compound pendulum** (*Phys.*). Any body capable of  
rotation about a fixed horizontal axis and in stable  
equilibrium under the action of gravity. If the centre of  
gravity is a distance *h* from the axis, and *k* is the **radius of  
gyration** about the horizontal axis through the centre of  
gravity, the period of small oscillations is

$$T = 2\pi \sqrt{\frac{h^2 + k^2}{hg}}$$

**compound pillar** (*Build.*). A pillar formed of a rolled-steel  
joist or channels strengthened by additional plates riveted  
or welded to the flanges.

**compound press tool** (*Eng.*). A press tool which performs  
two or more operations at the same station at each stroke  
of the press.

**compound reflex** (*Zool.*). A combination of several  
reflexes to form a definite coordination, either simultane-  
ous or successive.

**compound slide rest** (*Eng.*). Mounted on the upper face  
of the lathe cross-slide and carrying the tool post. Can be  
rotated or *set over* for cutting short internal or external  
tapers.

**compound train** (*Eng.*). A train of gear-wheels in which  
intermediate shafts carry both large and small wheels, in  
order to obtain a large speed ratio in a small space.

**compressed air** (*Eng.*). Air at higher than atmospheric  
pressure. It is used (often at about 600 kN/m<sup>2</sup>) as a  
transmitter of energy where the use of electricity or an IC  
engine would be hazardous (e.g. in mining). The exhaust  
air may be used for cooling or ventilation.

**compressed-air capacitor** (*Elec.Eng.*). An electric capac-  
itor in which air at several atmospheres' pressure is used  
as the dielectric, on account of its high dielectric strength  
at these pressures.

**compressed-air disease** (*Med.*). See **caisson disease**.

**compressed-air inspirator** (*Eng.*). Injector used with  
pressure-air burners, by which a stream of compressed air  
is directed through a venturi throat to inspire additional  
combustion air.

**compressed-air lamp** (*Min.Ext.*). An electric lamp for  
use in fiery mines; it is supplied from a small compressed-  
air-driven generator incorporated in the lamp-holder.

**compressed-air tools** (*Eng.*). See **pneumatic tools**.

**compressed-air wind tunnel** (*Aero.*). See **variable-density  
wind tunnel**.

**compressibility** (*Phys.*). The reciprocal of the bulk  
modulus. See also **coefficient of compressibility**.

**compressibility** (*Powder Tech.*). The property of a  
powder by which it accepts reduction in volume by  
pressure. It is measured as the ratio of the volume of  
loose powder to the volume of the compact, and is related